

REMARKS

This is in response to the non-final Official Action currently outstanding with respect to the above-identified application.

Claims 1-19 were present in this application as of the time of the issuance of the currently outstanding Official Action. Claims 9-12, 16 and 17 stand withdrawn from further consideration as being directed to a non-elected species. By the foregoing Amendment, Claims 1, 6 and 7 have been amended. No claims have been cancelled, and no New Claims have been added. Claims 16 (as amended) and Claim 17 have been rejoined as now belonging to the elected species by virtue of their respective dependence upon amended claim 8. Accordingly, upon the entry of the foregoing Amendment, Claims 1-8, and 13-19 will constitute the claims under active prosecution in this application.

A version of the claims as they will stand upon the entry of this amendment is set forth above as required by the Rules.

More specifically, it is noted that in the currently outstanding Official Action, the Examiner has:

1. Acknowledged Applicants' claim for foreign priority under 35 USC 119(a)-(d), and indicated that the required certified copies of the priority document have been received by the United States Patent and Trademark Office.

2. Provided Applicants with a copy of a Notice of References Cited (Form PTO-892) and copies of the references cited therein (Note: a copy of US patent No. 6,366,835 B1 was included with the currently outstanding Official Action but not listed on the Notice of References Cited or otherwise mentioned by the Examiner. Accordingly, it is assumed that the inclusion of US Patent No. 6,366,835 B1 with the currently outstanding Official Action was an inadvertent error.)
3. Acknowledged Applicants' Information Disclosure Statement by providing Applicants with a copy of the Form PTO-1449 that accompanied that Statement duly signed, dated and initialed by the Examiner to confirm his consideration of the art disclosed therein;
4. Failed to indicate whether or not the drawings attached to the present specification have been found to be acceptable. **An indication concerning the acceptability of the drawings currently on file in response to this communication is respectfully requested.**
5. Indicated that the present Title of the Invention is not acceptable because it is not descriptive of the invention being claimed, and required Applicant to provide a new Title of the Invention in response to the currently outstanding Official Action.
6. Rejected Claims 1-7 under 35 USC 102(b) as being anticipated by the Fox reference (U.S. Patent 4,712,749), or alternatively under 35 USC 103(a) as being unpatentable over that reference.

7. Rejected Claims 13-15, 18 and 19 under 35 USC 103(a) as being unpatentable over the Fox reference as applied to Claims 1-7 and further in view of the Bernstam reference (U.S. Patent 4,964,598).
8. Indicated that Claim 8 is objected to as being dependent upon a rejected base claim, but that Claim 8 would be allowable if rewritten in independent form including all of the limitations of its base claim and any intervening claims.

Further comment in these Remarks regarding items 1-4 above is not considered to be necessary in these Remarks.

With respect to item 5, attention is respectfully directed to the foregoing amendment wherein the Title of the Invention has been changed from "MOVING APPARATUS" to -- FLUTTERING WING-OPERATED FLYING MOVING APPARATUS --. Applicant respectfully submits that this new Title of the Invention clearly is descriptive of the subject matter being claimed and therefore is acceptable. A decision so holding in response to this communication is respectfully requested.

The Examiner's withdrawal of Claims 9-12, 16 and 17 as being directed to a non-elected species is acknowledged. Applicant respectfully submits that by virtue of the foregoing amendment of Claim 8, Claims 16 and 17 that depend from Claim 8 now are drawn to the elected species and should be rejoined into the present prosecution. Otherwise, Applicant specifically notes that in the event that a generic claim is finally allowed, it will be permitted under the Rules to claims to additional species phrased in appropriate form.

With respect to items 6-8 above, Applicant now has amended claims 1, 5, 8 and 16. Accordingly, it will be seen that claim 1 now contains a limitation directed to the wing portion consisting of two wings and a limitation directed to the fact that the moving apparatus can hover using the two wings claimed. This amendment is representatively supported in the present specification at page 19, lines 2 to 8 and in Figs. 1 and 14. Hence no new matter is introduced into this application by virtue of the foregoing amendment of Claim 1. In addition, it is respectfully submitted that Claim 1 as hereinabove amended is now clearly distinct from the Fox reference because the Fox reference is limited to a structure that includes four (4) wings.

More specifically, the Fox reference discloses two pairs of wings, one located on each side of a main moving body. Further, each of the respective wings of each pair in the Fox reference flutter relative to the body to which they are attached 180° out of phase with one another, but in phase with the wing of the wing pair on the opposite side of the body that is located diagonally to it. Thus, the Fox reference contemplates that the rear wing on the right side of the body and the front wing on the left side of the body flutter in phase with one another and 180° out of phase with the rear wing on the left side of the body and the front wing on the right side of the body.

Hence, there is a resultant overall vertical upward force imparted to the main body **during every stroke** of the wings in the Fox structure since one of the wings on each side of the main body is traveling downward during each stroke and the upward force generated by the downward traveling wings exceeds the force of gravity on the apparatus.

The Fox reference, therefore, is very different structurally from the currently elected embodiment of the present invention (Figs. 1-10, 14-16 and 37-39) that includes one wing on each side of the body, wherein each wing comprises a film spread across a pair of wing shafts that reciprocate up and down separately relative to one another in response to applied driving forces. It also is operationally different from the Fox reference in that in the present invention, the vertically upward force is applied only during the downstrokes of the wings. Hence, stable flight results only when the time average of a series of alternate up and down strokes of the wings is a vertically upward force exceeding the force of gravity.

Stated slightly differently, the Fox reference teaches the need for a vertically directed upward force greater than the force of gravity during each stroke of the wings, while the present invention teaches that stable flight can be achieved when only the time average of the forces applied by the wings to the main body exceeds the force of gravity.

Further none of the other cited references contain any disclosure concerning the apparatus therein disclosed having the capability of hovering.

Still further, Applicant respectfully submits that Claims 2-4, 6-7 and 18-19 that now all depend directly from Claim 1 also are allowable.

With respect to Claim 8, it is respectfully noted that the Examiner has indicated that Claim 8 would be allowable if rewritten so as to include all of the limitations of its base claim and any intervening claims. Applicant has so amended Claim 8 hereinabove and consequently respectfully submits that Claim 8 is now in condition for allowance. A decision so holding in response to this Amendment is respectfully requested.

No further comment upon the Examiner's other bases for rejection as stated in the currently outstanding Official Action are believed to be required.

Reconsideration of this application and the allowance of Claims 1-8, and 13-19 of this application in response to this communication, therefore, are respectfully requested.

Finally, Applicants believe that additional fees are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: July 15, 2003

By: David A. Tucker
David A. Tucker
Reg. No. 27,840
Attorney for Applicant(s)

EDWARDS & ANGELL, LLP
P.O. Box 9169
101 Federal Street
Boston, MA 02109
(617) 523-3400
337149v2